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| EXAMINER |
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KLING, CHARLES

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| ART UNIT | PAPER NUMBER |
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4171

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10/28/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/581,245 | Applicant(s) SCHERINGER ET AL. | |
| | Examiner CHARLES W. KLING | Art Unit 4171 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 1, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05-31-06 and 01-11-07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is the first action on the merits in response to most recent correspondence dated 03-29-07.
2. Claims 1 – 16 are pending.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p) (4) because reference character “**29**” has been used to designate both “first quantity of air” and “pivoting path” (**figure 2**).
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p) (5) because they do not include the following reference sign(s) mentioned in the description: A separating curtain, **element 13**, is described in the specification (**line 33 of page 7**) but is not shown in figure 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claim **1** is objected to because of the following informalities: Lines 5-6 read in part, "...stream is produced the dishwasher counter..." This phrase is unclear. For the purposes of examination, this phrase has been taken to mean, "...stream is produced in the dishwasher counter..." Appropriate correction is required.

6. Claims **15-16** are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). **Accordingly, the claims have not been further treated on the merits.**

7. With regard to claim **12**: A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims **1-14** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. See *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1998)

10. *The breadth of the claims and nature of the invention:* The crux of the instant invention is that changes in the position of the nozzles of the drying fan (19) would cause more or less air to be forced through the dishwashing machine towards the suction-extraction fan (12). However, the applicant has not sufficiently explained how or why these results would occur when practicing the instant invention.

11. *The level of one of ordinary skill:* As is commonly known in the art, air will flow from an area of high pressure to an area of low pressure (Newton's first law of motion). The drying fan of the instant invention would take air from the drying zone (7) and then return this air to the drying zone (line 39 of page 9, line 1 of page 10). This action would not change the pressure of the drying zone with respect to the surrounding zones, but would instead merely move air around within the drying zone.

12. *The level of predictability in the art:* The applicant claims that a horizontal component (36) of air flow leaving the drying fan would cause air to flow through the dishwashing machine. However, even if this were the case (see above), this horizontal component would be blocked and reflected by the curtain which separates the drying zone from the clean-water rinsing zone (lines 33-34 of page 7) and additionally would be blocked and randomly diverted by wash ware (10) in the machine. Thus, during practical use, the horizontal component of the air flow would be chaotically diverted in

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random directions within the drying zone resulting in a lack of control over the direction of this air flow.

13. *The state of the prior art:* The suction-extraction fan (12) of the instant invention would create an area of low pressure. This area of low pressure would serve to draw air into the dishwasher. This air would come primarily (path of least resistance) from the second intake gap (40) with some additional air also coming from the first intake gap (39). This air volume would be based on the speed and power of the suction-extraction fan and the resistance caused by obstructions in the path of the air (random placement of wash ware, size of the intake gaps, etc.), irrespective of the action of the drying fan (19) or the position of its associated nozzles.

14. *The amount of direction provided by the inventor:* It should be noted that neither the size of the intake gaps (39, 40) nor the space available for airflow around the wash ware (10) or the internal curtains (13) is specified by the applicant.

15. *The quantity of experimentation needed to make or use the invention based on the content of the disclosure:* Due to the above considerations, it has been determined that the specification fails to teach one skilled in the art, at the time of the invention, how to make or use the claimed invention without undue experimentation.

16. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

17. Claim 7 is rejected under 112 2nd paragraph. Claim 7 recites the limitation "the exit nozzles" in line 3. There is insufficient antecedent basis for this limitation in the claim.

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18. Claim 10 is rejected under 112 2nd paragraph. Claim 10 recites the limitation "the heat-recovery device" in line 2. There is insufficient antecedent basis for this limitation in the claim.

19. Claim 14 is rejected under 112 2nd paragraph. Claim 14 recites the limitation "the heat-recovery device" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. **The elements of the claims, when recited in this action, are anticipated and/or disclosed by the relevant prior art as shown in parenthesis and bold type.**

22. Claims 1-2, 7-9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over EBERHARDT (US-4,561,904) in view of METZGER (US-4,336,279).

23. With regard to claim 1, EBERHARDT teaches:

A conveyor dishwasher (...**a conveyor-type dishwasher...lines 1-2 of abstract**) having at least one washing zone (**element 56 of figure 1**), at least one rinsing zone (**element 76 of figure 1**), a drying zone (**element 108 of figure 1**), a suction-extraction location (**element 120 of figure 1**) for an exhaust-air stream (**exhaust stream shown as arrow inside element 120 in figure 1**) and a transporting device (**element 24 of figure 1**) for conveying wash ware in the transporting direction

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through the conveyor dishwasher (**conveyor operation discussed in lines 29-31 of column 5**), characterized in that the exhaust-air stream is produced [in] the dishwasher counter to the transporting direction of the wash ware through the dishwasher by regulated action on flow from the drying zone and/or the washing zone.

24. EBERHARDT does not appear to explicitly/expressly disclose the exhaust air stream moving counter to the direction of the conveyor, where said stream is produced by regulated action in the drying and/or washing zone.

25. However, METZGER discloses a substrate drying apparatus (**element 10 of figure 1**) where the exhaust stream (**air flow shown by arrow B and multiple internal arrows in figure 1**), flows counter to the direction of the conveyor (**conveyor direction shown by arrow A in figure 1**). Said stream is regulated by the action of a motor driven fan (**element 28 of figure 1**) and a controllable damper (**damper action discussed in lines 36-40 of column 3**).

26. At the time of the invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the dishwasher of EBERHARDT to include the regulated counter exhaust stream of METZGER, since air flow moving counter to the conveyor serves to move air containing volatiles (such as water vapor) from areas of lower volatile concentration towards areas of higher volatile concentration, which facilitates increased drying action, as taught by METZGER (**lines 29-44 of column 3**).

27. With regard to claim **2**, METZGER teaches:

The conveyor dishwasher as claimed in claim 1, characterized in that the suction-extraction location (**exhaust duct, element 26 of figure 1**) for extracting the exhaust-air

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stream by suction (**suction created by motor driven fan, element 28 of figure 1**) is arranged in the region of an inlet (**exhaust duct shown near the region of the inlet in figure 1**) of the dishwasher.

28. With regard to claim 7, EBERHARDT teaches:

The conveyor dishwasher as claimed in claim 1, characterized in that a deflecting surface (**element 118 of figure 1**) is accommodated in the region of the drying zone, beneath the exit nozzles (**deflecting surface shown beneath drying fan in figure 1**).

29. With regard to claim 8, EBERHARDT teaches:

The conveyor dishwasher as claimed in claim 7, characterized in that the deflecting surface is of essentially horizontal design (**center of element 118 shown as horizontal in figure 1**) and runs beneath the device for transporting the wash ware (**element 118 shown below conveyor, element 24, in figure 1**).

30. With regard to claim 9, EBERHARDT teaches:

The conveyor dishwasher as claimed in claim 1, characterized in that the drying zone (**element 108 of figure 1**) is assigned a separating curtain (**element 122 of figure 1**) on the outlet side (**curtain shown on outlet side in figure 1**), as seen in the transporting direction of the wash ware, and this separating curtain bounds an intake opening via which an external-air stream can be taken into the drying zone (**Air would be able to flow around the perimeter of the curtain, especially when the items being washed are moving through the curtain as described in the lines 39-41 of column 6**).

31. (Additionally, METZGER discloses an air intake, arrows B of figure 1, on the outlet side, which allows air flow into the drying zone.)

32. With regard to claim 11, METZGER teaches:

The conveyor dishwasher as claimed in claim 1, characterized in that the exhaust-air stream which is extracted via the suction-extraction location **(exhaust duct damper which exhausts to atmosphere discussed in lines 36-40 of column 3)** corresponds to the external-air streams which are taken in via the intake openings **(External air streams and intake openings shown near left-most arrow A and arrows B of figure 1. Corresponding mass of exhaust and intake is inherent in the movement of a gas into and out of an enclosed space.)**.

33. Claims **3-4, 6, 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over EBERHARDT and METZGER as applied to claim 1 above, and further in view of FRATELLO ET AL. (US PG-Pub 2003/0233767).

34. EBERHARDT and METZGER disclose the elements of claim 1 (see 103(a) rejection above).

35. With regard to claim 3, EBERHARDT teaches:

The conveyor dishwasher as claimed in claim 1, characterized in that a drying fan **(element 114 of figure 1)** is arranged in the drying zone **(element 108 of figure 1)** and has pivotably designed exit nozzles assigned to it.

36. EBERHARDT and METZGER do not appear to explicitly/expressly disclose the drying fan including pivotably designed exit nozzles.

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37. However, FRATELLO ET AL. discloses a blower dryer for a carwash which includes a drying fan with a rotatable nozzle **(abstract)**.

38. At the time of the invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the dishwasher of EBERHARDT and METZGER to include the drying fan with rotatable nozzle of FRATELLO ET AL., since the directed nozzle serves to better push liquid particles toward the side or end of items being washed, thus enhancing the drying process as taught by FRATELLO ET AL. **(abstract)**.

39. With regard to claim 4, FRATELLO ET AL. teaches:

The conveyor dishwasher as claimed in claim 3, characterized in that volumes of exhaust air passing out of the drying zone are dependent on the position of the exit nozzles **(The volume of air leaving the drying zone of the carwash would be dependent on the position of the nozzles. If the nozzles were directed straight towards the exit, as shown in figure 10, then large volumes of air would be caused to exit the drying zone. However, if the nozzles were positioned more perpendicular to the exit, as shown in figure 11, then more air would be recirculated by the fans and therefore, less air would be caused to exit the drying zone.)**.

40. With regard to claim 6, FRATELLO ET AL. teaches:

The conveyor dishwasher as claimed in claim 4, characterized in that a second quantity of air which can be channeled away out of the drying zone can be varied in dependence on the pivoting position of the exit nozzles of the drying fan **(The volume of air leaving the drying zone of the carwash would be dependent on the position**

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of the rotating nozzles. If the nozzles were directed straight towards the exit, as shown in figure 10, then large volumes of air would be caused to exit the drying zone. However, if the nozzles were positioned more perpendicular to the exit, as shown in figure 11, then more air would be recirculated by the fans and therefore, less air would be caused to exit the drying zone.)

41. With regard to claim **12**, FRATELLO ET AL. teaches:

The conveyor dishwasher as claimed in claim 4, characterized in that the exit nozzles within the drying zone can be adjusted by electromotive, pneumatic (**...pneumatic actuator...line 6 of paragraph [0033]**) or hydraulic means or mechanically via levers (**rotating action of the exit nozzles, by the pneumatic actuator, discussed in paragraph [0033]**).

42. With regard to claim **13**, FRATELLO ET AL. teaches:

The conveyor dishwasher as claimed in claim 1, characterized in that the exit nozzles can be adjusted in the pivoting direction during operation of the conveyor dishwasher (**controlled operation of nozzle adjustment, during washing operation, discussed in paragraph [0037]**).

43. Claim **5** is rejected under 35 U.S.C. 103(a) as being unpatentable over EBERHARDT, METZGER and FRATELLO ET AL. as applied to claim 4 above, and further in view of WEIHE (US-3,598,131).

44. EBERHARDT, METZGER and FRATELLO ET AL. disclose the elements of claim 4 (see 103(a) rejection above).

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45. EBERHARDT, METZGER and FRATELLO ET AL. do not appear to explicitly/expressly disclose the dishwasher being operated without clouds of steam at the inlet and outlet.

46. However, WEIHE discloses two steam collection systems for a dishwasher which prevent clouds of steam from being ejected at the inlet and outlet by pulling the steam into the heat recovery systems **(lines 6-14 of column 3)**.

47. At the time of the invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the dishwasher of EBERHARDT, METZGER and FRATELLO ET AL. to include the steam collection systems of WEIHE, since these devices recover the heat of condensation and reduce the humidity in the dishwasher room, as taught by WEIHE **(abstract)**.

48. Claim **10** is rejected under 35 U.S.C. 103(a) as being unpatentable over EBERHARDT and METZGER as applied to claim 1 above, and further in view of WEIHE.

49. EBERHARDT and METZGER disclose the elements of claim 1 (see 103(a) rejection above).

50. EBERHARDT and METZGER do not appear to explicitly/expressly disclose a fan on a heat recovery device, the capacity of which is dependent on the amount of air channeled out of the drying zone.

51. However, WEIBE discloses a steam collection system for a dishwasher which includes two fans **(element 80 of figure 1)** of two heat recovery devices **(elements 64,**

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65 of figure 1) where the capacity of the fans is dependent on the amount of air channeled out of the dishwasher.

52. At the time of the invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the dishwasher of EBERHARDT and METZGER to include the fan of the heat recovery device of WEIHE, since these devices recover the heat of condensation and reduce the humidity in the dishwasher room, as taught by WEIHE (**abstract**).

53. Claim **14** is rejected under 35 U.S.C. 103(a) as being unpatentable over EBERHARDT, METZGER, and WEIHE as applied to claim 10 above, and further in view of ANDERSSON (SE-9,503,485).

54. EBERHARDT and METZGER disclose the elements of claim 1 (see 103(a) rejection above).

55. EBERHARDT, METZGER, and WEIHE do not appear to explicitly/expressly disclose the use of a speed-regulated fan to control the exhaust stream of the heat recovery device.

56. However, ANDERSSON discloses a ventilation control system which utilizes a speed-regulated fan (**abstract**).

57. At the time of the invention, it would have been *prima facie* obvious to one having ordinary skill in the art to modify the heat recovery device of EBERHARDT, METZGER, and WEIHE to include the speed-regulated fan of ANDERSSON, since all the claimed elements were known in the prior art and one skilled in the art, at the time of the

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invention, could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results.

Conclusion

58. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. KATTERHEINRICH ET AL. (US-3,789,860) is considered pertinent as it deals with removing heat and humidity from the area surrounding a dishwasher.
- b. ROBINSON (US-3,896,827) is considered pertinent as it deals with a dishwasher control system based on sensed physical conditions (such as temperature and humidity) inside the dishwasher.
- c. CARLSSON (GB-2,030,446) is considered pertinent as it deals with another approach to removing heat and humidity from the area surrounding a dishwasher.
- d. LORENZ (DE-3,041,635) is considered pertinent as it deals with air flow pathways and control in a dishwasher.
- e. KRAMERENKO ET AL. (SU-1,496,770) is considered pertinent as it deals with air flow pathways and control in a dishwasher.
- f. WOERTER (EP-0,838,190) is considered pertinent as it deals with air flow pathways and control in a dishwasher as well as removing heat and humidity from the area surrounding a dishwasher.

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g. ECKER ET AL. (US PG-Pub 2007/0125403) is considered pertinent as it deals with air flow pathways and control in a dishwasher as well as removing heat and humidity from the area surrounding a dishwasher.

59. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES W. KLING whose telephone number is 571-270-5524. The examiner can normally be reached on Monday through Friday 8:00 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on 571-272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHARLES W. KLING/
Examiner, Art Unit 4171

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/PATRICK NOLAN/

Supervisory Patent Examiner, Art Unit 4171